CLAIM AMENDMENTS

Claims 1-33 (Cancelled).

34. (Currently Amended) A method of culturing a microorganism in a medium for the synthesis of docosahexaenoic acid (DHA) by the microorganism, comprising culturing ~~a microorganism comprising~~ *Crypthecodinium cohnii* with a compound selected from acetic acid and an acetate ion, the microorganism using the compound as the primary carbon source and synthesizing DHA, in the absence of a stationary phase.

Claims 35-36 (Cancelled).

37. (Currently Amended) The method according to claim 34, wherein ~~the microorganism is cultured in a medium and~~ the use of the compound as a carbon source by the microorganism causes an increase in pH of the medium, the method further including monitoring the pH to control the addition of the compound to the medium and adding the compound in response to an increase in pH.

38. (Previously Presented) The method according to claim 37, wherein adding the compound maintains the pH substantially at a preset value of between about 5 and about 8.

39. (Previously Presented) The method according to claim 38, wherein the preset value is about 6.5.

40. (Currently Amended) The method according to claim 37, wherein the pH of the medium is monitored by means communicating with a ~~controller~~ control device, the ~~controller~~ control device controlling the addition to the medium.

41. (Currently Amended) The method according to claim 40, wherein the ~~controller~~ control device is used to control addition of one or more of a nitrogen source, a phosphorus source, an amino acid, a vitamin, a salt or another growth factor during the culture of the microorganism.

42. (Previously Presented) The method according to claim 37, wherein said compound is added to the medium in a mixture comprising a further component.

43. (Previously Presented) The method according to claim 42, wherein the further component is an organic acid.

44. (Previously Presented) The method according to claim 42, wherein the further component is a lipid.

45. (Previously Presented) The method according to claim 42, wherein the mixture is a waste product from an industrial process.

46. (Previously Presented) The method according to claim 42, wherein the further component is a nitrogen source, a phosphorus source, an amino acid, a vitamin, a growth factor, a salt or a lipid.

47. (Previously Presented) The method according to claim 34, wherein prior to culturing with acetic acid or an acetate ion, the microorganism is cultured with glucose.

48. (Previously Presented) The method according to claim 34, wherein the microorganism is cultured with an organic nitrogen source.

49. (Previously Presented) The method according to claim 48, wherein the organic nitrogen source is yeast extract and the initial concentration of the yeast extract is greater than 7.5 g/l.

50. (Previously Presented) The method according to claim 49, wherein the initial concentration of yeast extract is 10 g/l.

51. (Previously Presented) The method according to claim 34, wherein the microorganism is cultured with salts or osmoticants.

Claims 52-73 (Cancelled).

74. (Previously Presented) The method of claim 34, wherein said culturing method is performed as a continuous or semi-continuous process.

75. (Previously Presented) A method according to claim 34, wherein the method further comprises extracting oil including docosahexaenoic acid from the microorganism.

76. (Previously Presented) A method according to claim 75 further comprising purifying the oil to increase the docosahexaenoic acid content of the oil.

77. (Previously Presented) A method according to claim 34, wherein the method further comprises the purification or partial purification of docosahexaenoic acid from the microorganism.

78. (Previously Presented) A method according to claim 34 wherein the initial concentration of the acetic acid or acetate ion in the culture is between 4 and 16 g/l.

79. (Previously Presented) A method according to claim 78, wherein the initial concentration of the acetic acid or acetate ion is about 8 g/l.

Claim 80 (Cancelled).

81. (Previously Presented) A method according to claim 34, wherein the percent docosahexaenoic acid in the total extractable lipid is at least 29.3.

82. (Previously Presented) A method according to claim 34, wherein during the culturing process the total concentration of docosahexaenoic in the growth medium rises to at least 0.9 g/l.

Claims 83-86 (Cancelled).